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ABSTRACT

Prepared cooperatively by the Bureau of the Census and the Economic Research Service of the U.S. Department of Agriculture, this document presents narrative and tabular data on: demographic and social characteristics of the farm population; economic characteristics of the farm population; revision of farm population processing procedures; and related reports. Tables within the text include: population of the United States, total and farm: April 1960 to 1976; fertility characteristics of farm and nonfarm women, by race: 1976; metropolitan-nonmetropolitan residence of the farm and nonfarm population, by race: 1976; persons 14 years old and over employed in agriculture, by farm-nonfarm residence and sex: April 1976 and 1970; nonfarm residents 14 years old and over employed in agriculture, by class of worker and sex: April 1976 and 1970; and income characteristics of farm and nonfarm families by race: 1975. Detailed tables are presented as follows: farm population, by race and sex, for broad age groups: April 1976 and 1970; farm population, by age and sex: April 1976 and 1970; characteristics of farm and nonfarm families, by race: 1976; employment status of the farm population 14 years old and over, by sex, April 1976 and 1970, and by region, April 1976; farm residents 14 years old and over employed in agriculture, by class of worker, race, and sex, April 1976 and 1970, and by region: April 1976; farm residents 14 years old and over employed in nonagricultural industries, by class of worker, race, and sex for regions: April 1976. (JC)

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Farm Population

Series Census-ERS
P-27, No. 49
Issued December 1977

Farm Population of the United States: 1976

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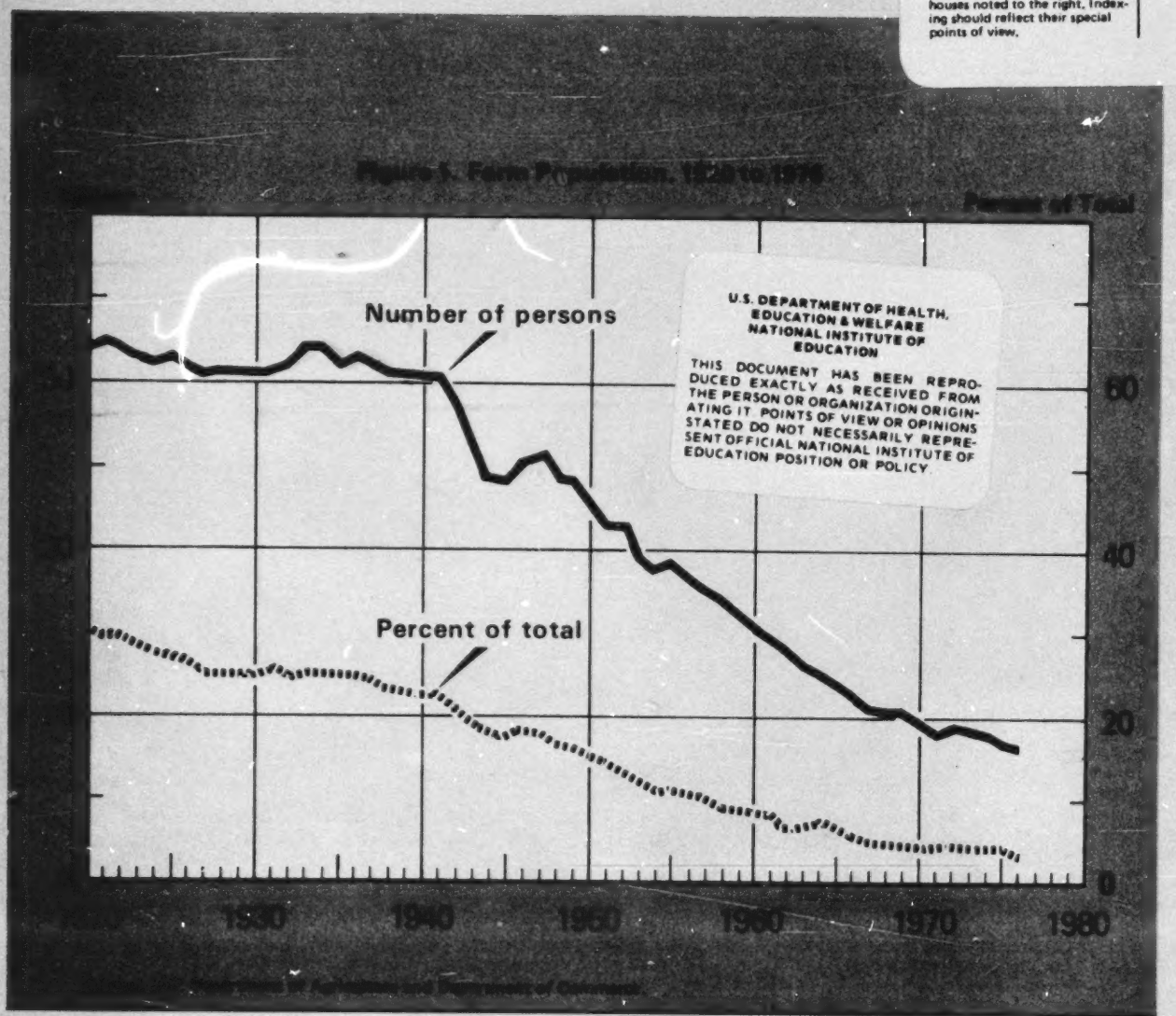

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Farm Population

Series Census–ERS
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Farm Population of the United States: 1976

Contents

Page

Demographic and social characteristics of the farm population 1
Economic characteristics of the farm population 5
Revision of farm population processing procedures 7
Related reports 9

TEXT TABLES

Table

A. Population of the United States, total and farm: April 1960 to 1976 1
B. Metropolitan-nonmetropolitan residence of the farm and nonfarm population, by race: 1976 2
C. Fertility characteristics of farm and nonfarm women, by race: 1976 4
D. Persons 14 years old and over employed in agriculture, by farm-nonfarm residence and sex: April 1976 and 1970 7
E. Nonfarm residents 14 years old and over employed in agriculture, by class of worker and sex: April 1976 and 1970 .. 7
F. Income characteristics of farm and nonfarm families, by race: 1975 8

CHARTS

Figure

1. Farm population, 1920 to 1976 ..... Cover
2. Farm population by age for selected years, 1960 to 1976 3
3. Farm residents employed in agriculture and nonagricultural industries, 1961 to 1976 6

DETAILED TABLES

Table

1. Farm population, by race and sex, for broad age groups: April 1976 and 1970 11
2. Farm population, by age and sex: April 1976 and 1970 11
3. Characteristics of farm and nonfarm families, by race: 1976 12
4. Employment status of the farm population 14 years old and over, by sex, April 1976 and 1970, and by region, April 1976 13
5. Employment status of the farm population 14 years old and over, by race, sex, and for region: April 1976 14
6. Farm residents 14 years old and over employed in agriculture, by class of worker, race, and sex, April 1976 and 1970, and by region: April 1976 15
7. Farm residents 14 years old and over employed in nonagricultural industries, by class of worker, race, and sex, for regions: April 1976 16

CONTENTS—Continued

APPENDIX

	Page
Definitions and explanations	17
Source and reliability of the estimates	20

APPENDIX TABLES

Table		
A-1	Standard errors of estimated numbers of persons or families in the farm population	22
A-2	Standard errors of estimated numbers of persons or families in the total or nonfarm population	23
A-3	Standard errors of estimated percentages	24
A-4	Standard errors of estimated fertility rates for the nonfarm population	24
A-5	Parameters or factors and standard error tables to be used to obtain standard errors for each type of characteristic	26
A-6	Estimates of the number of ever-married women and number of currently married women reporting birth expectations, by age, race and farm-nonfarm residence: June 1976 CPS	27

SYMBOLS USED IN TABLES

– Represents zero or rounds to zero.

B Base less than 75,000.

Farm Population of the United States: 1976

(Advance data on the 1976 farm population were issued in April 1977 in Current Population Reports Series P-27, No. 48)

The number of persons living on farms in rural areas of the United States averaged 8,253,000 for the 12-month period centered on April 1976. About 1 person out of every 26, or 3.9 percent of the Nation's 214 million people, had a farm residence (table A). These estimates were prepared cooperatively by the Bureau of the Census and the Economic Research Service, U.S. Department of Agriculture.

The farm share of the total U.S. population has declined fairly steadily over the last 55 years (figure 1). In 1920, when the farm population was first enumerated separately, 30 percent of the Nation's population resided on farms. The proportion had fallen to 15 percent by 1950, to 5 percent by 1970, and has now dropped below 4 percent.[1]

Although the overall trend has been one of decline, the rate of decrease in the farm population has shown short-term fluctuations. After declining at an average annual rate of 4.8 percent during the 1960's, the farm population appeared to be leveling off in the early 1970's. The average rate of decline from 1970 to 1974 was 1.2 percent per year. Since 1974, the rate of loss has accelerated, with an average annual decline from 1974 to 1976 of 5.8 percent. It should be noted, however, that this rate is somewhat inflated because of changes made in 1976 involving the procedures for processing survey information on farm and nonfarm residence. (These changes are explained in detail in a later section of this report.) Approximately 130,000 of the 611,000 decline in the farm population between 1975 and 1976 may be attributable to processing changes.

Table A. Population of the United States, Total and Farm: April 1960 to 1976

(Numbers in thousands)

Year	Total resident population	Farm population	
		Number of persons[1]	Percent of total population
1976.....	214,284	8,253	3.9
1975.....	212,542	8,864	4.2
1974.....	211,018	9,264	4.4
1973.....	209,468	9,472	4.5
1972.....	207,802	9,610	4.6
1971.....	205,677	9,425	4.6
1970.....	[2]203,235	9,712	4.8
1969.....	200,887	10,307	5.1
1968.....	198,923	10,454	5.3
1967.....	196,976	10,875	5.5
1966.....	195,045	11,595	5.9
1965.....	192,983	12,363	6.4
1964.....	190,507	12,954	6.8
1963.....	187,837	13,367	7.1
1962.....	185,104	14,313	7.7
1961.....	182,298	14,803	8.1
1960.....	[2]179,323	15,635	8.7

[1]Five-quarter averages centered on April; see "Definitions and Explanations."
[2]Official census count.

DEMOGRAPHIC AND SOCIAL CHARACTERISTICS OF THE FARM POPULATION

Distribution. While the farm population is primarily nonmetroplitan, one-fifth of the farm total lives within the boundaries of standard metropolitan statistical areas (SMSA's) as defined in 1970 (table B). In comparison, nearly 70 percent of the nonfarm population lives within the 1970 metropolitan boundaries. Data for families from the March 1976 Current Population Survey (CPS) indicate that the majority of the metropolitan farm population resides in SMSA's of less than 1 million population.[2]

There is a difference by race in the distribution of the farm population by metropolitan-nonmetropolitan residence.

[1] Estimates of the farm population from 1920 to the present are not strictly comparable due to definitional changes. Prior to 1960, farm residence was based essentially on self-identification, i.e., respondents themselves determined whether or not they lived on a farm. From 1960 through 1976, the farm population has been restricted to persons living in rural territory and has been identified on the basis of acreage and sales information (see "Definitions and Explanations" in the appendix).

[2] U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 311, "Household and Family Characteristics: March 1976." Much of this farm population is "metropolitan" in little more than a technical sense, being included in SMSA's because the latter are defined in terms of entire counties and thus frequently include nonsuburbanized territory. The metropolitan farm population may have a certain significance, however, as representing farm residents who live close to sizable cities.

Black[3] farm residents are more likely to live in nonmetropolitan areas than are Whites. Approximately 90 percent of the Black farm population resided in nonmetropolitan areas in 1976; the comparable proportion for Whites was 80 percent. In contrast, Blacks who live off farms are more likely to be in metropolitan areas than are their White counterparts.

Racial composition. The farm population is becoming increasingly White due to differences in the rates of decline of Whites and Blacks (table 1). Blacks on farms numbered 541,000 in 1976 and represented 7 percent of the total farm population; the corresponding proportions in 1960 and 1970 were 16 and 10 percent, respectively. Between 1970 and 1976, the number of Whites on farms decreased by 12 percent as compared with a 42-percent decrease for Blacks. The annual rates of loss over this 6-year period averaged 2.2 percent for Whites and 9.2 percent for Blacks. A similar differential in rates of decline was experienced over the preceding decade. From 1960 to 1970, the number of Whites on farms decreased at an average annual rate of 4.0 percent, while the average rate of loss for Blacks was 10.1 percent per year.

Historically, higher rates of population loss among Black farm residents have been associated with heavy losses in the number of cotton and tobacco tenant farmers. Blacks have had a disproportionate representation among tenant farmers,

[3] The data for Blacks in the text refer to Blacks and persons of races other than White. In the 1970 census, Blacks comprised 90 percent of the total population other than White and 87 percent of the farm population other than White.

Table B. Metropolitan-Nonmetropolitan Residence of the Farm and Nonfarm Population, by Race: 1976

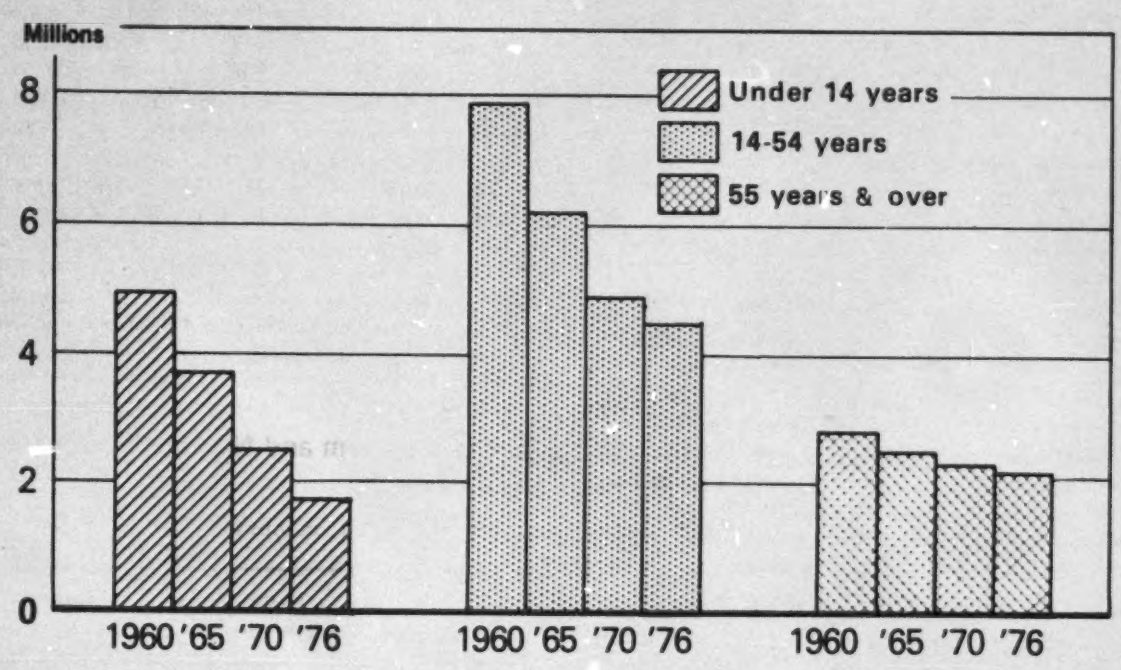
(Figures are five-quarter averages centered on April)

Race and residence	Total	Farm	Nonfarm
ALL RACES			
United States.....thousands..	[1]210,332	8,253	202,079
Inside SMSA's[2].....thousands..	142,567	1,560	141,007
Percent.....	67.8	18.9	69.8
Outside SMSA's.....thousands..	67,765	6,693	61,072
Percent.....	32.2	81.1	30.2
WHITE			
United States.....thousands..	182,638	7,711	174,927
Inside SMSA's.....thousands..	121,392	1,498	119,894
Percent.....	66.5	19.4	68.5
Outside SMSA's.....thousands..	61,246	6,213	55,033
Percent.....	33.5	80.6	31.5
BLACK AND OTHER RACES			
United States.....thousands..	27,694	541	27,153
Inside SMSA's.....thousands..	21,175	62	21,113
Percent.....	76.5	11.5	77.8
Outside SMSA's.....thousands..	6,519	479	6,040
Percent.....	23.5	88.5	22.2

[1] The total U.S. population figure shown here differs from that shown in table A because table A refers to the total resident population, whereas this and other tables refer only to the civilian noninstitutional population.

[2] SMSA's refers to standard metropolitan statistical areas as designated in the 1970 census publications; see "Definitions and Explanations."

Figure 2. Farm Population by Age for Selected Years, 1960 to 1976



and the number of such farms has fallen steadily and sharply since 1935. With mechanization and modernization of cotton and tobacco farming, landowners have, for the most part, ceased to employ tenant labor to produce their crops. Declines in the number of small farms and of hired workers who live on farms have also contributed to the disproportionate drop in the Black farm population.[4]

Age. The farm population has been characterized for many years by unequal rates of population loss between the two broad age groups—under 14 years and 14 years old and over. Since 1970 the number of farm children under 14 years of age has dropped by a third, and their proportion of all farm people has declined from 26 to 20 percent (figure 2 and table 2). During this same period, the number of farm persons 14 years old and over decreased by only 9 percent. This decline in children reflects both the high net outmigration in earlier decades of young farm adults of childbearing age and the sharp drop in the national birth rate in the early 1970's, which extended to farm as well as nonfarm areas.

Higher rates of decrease among those under 14 years of age characterized both the White and Black farm populations. During the 1970 to 1976 period, the number of White children on farms declined by 28 percent, while the White adult farm population decreased by only 7 percent (table 1). The comparable rates of decline for Blacks were 60 and 32 percent, respectively. Despite the marked difference in rates of population loss, there is some evidence that children continue to comprise a greater proportion of the Black farm population than they do of the White farm population. In 1976, 25 percent of all Blacks on farms were under 14 years of age, compared with 20 percent of White farm residents.

The pattern of decline was not consistent for different age groups of adults. Over the 1970 to 1976 period, young adults aged 20 to 34 years rose as a proportion of the total farm population from 13 to 16 percent. No significant changes occurred in the proportions of farm teenagers—those 14 to 19 years old—or of the older age categories of farm adults.

Sex. The dwindling size and changing age structure of the farm population has not affected the continuance of another of its distinctive features—more males than females. Farm males outnumbered farm females by 358,000 in 1976; there were 109 males on farms for every 100 females (table 2). In comparison, there were only 93 males per 100 females in the nonfarm civilian noninstitutional population. The stronger representation of males in the farm population reflects a

[4] Vera J. Banks and Calvin L. Beale, "Farm Population by Race, Tenure, and Economic Scale of Farming, 1960 and 1970," **Agricultural Economic Report** No. 228, U.S. Department of Agriculture, Economic Research Service, 1972; and Calvin L. Beale, "The Black American in Agriculture" in Mabel M. Smythe, ed., **The Black American Reference Book** (Englewood Cliffs, N.J.: Prentice-Hall, 1976).

somewhat higher rate of outmigration of females as compared with males.[5] This outmigration of females from farms, typically as they reach maturity, reflects the predominately masculine nature of farm work; of the 2 million farm residents employed in agriculture in 1976, 1.6 million or more than four-fifths were male (table D).

Family type and size. Data from the March 1976 CPS indicate that a greater proportion of farm families than of nonfarm families have both husband and wife present (table 3). While 92 percent of farm families include both husband and wife, the comparable figure for nonfarm families is 84 percent. This difference between farm and nonfarm families exists for both Whites and Blacks.

The average sizes of farm and nonfarm families in March 1976 were 3.5 and 3.4 persons, respectively—a difference which is not statistically significant. Nor was there any significant difference between the average size of White farm families (3.4 persons) and White nonfarm families (3.3 persons). Among Blacks, however, there is some statistical evidence that the average of 4.6 persons per farm family was higher than the 3.9 person average for nonfarm families.

While the average sizes of farm and nonfarm families are not significantly different, the distributions of families by number of persons show that large families—those with 6 or more persons—constitute a greater share of farm families (12 percent) than of nonfarm families (9 percent). The higher proportion of large families within the farm population is partially due to the presence, among families which have children, of a greater number of children within farm families. Among families with own children under 18 present, 9 percent of farm families have 5 or more children compared to only 4 percent of nonfarm families. This difference is not completely reflected in the mean family size estimates because of the offsetting effect of the smaller proportion of farm families with own children under 18 present; 47 percent of farm families have own children under 18 compared to 54 percent of nonfarm families.

Fertility. The fertility of farm women continues to be higher than that of nonfarm women. Data for June 1976 (table C) indicate that the average number of children born to farm women 15 to 44 years of age who have ever been married (2,699 per 1,000 women) is significantly higher than the average born to nonfarm women of comparable age (2,064 per 1,000 women). However, there is some evidence that the difference is mainly attributable to the fertility experience of women in the oldest (35 to 44 years) age group, who have essentially completed their childbearing.

Table C also presents June 1976 data on birth expectations of currently married women 14 to 39 years of age. Farm women in this age group expected to have a lifetime total of 2,947 births per 1,000 women. Although this figure is significantly higher than the 2,428 births per 1,000 expected by nonfarm women, it should be noted that this difference in lifetime births expected is due entirely to a difference in the number of births to date.

[5] Dale E. Hathaway, J. Allen Beegle, and W. Keith Bryant, **People of Rural America**, U.S. Bureau of the Census, 1960 Census Monograph (Washington, D.C.: U.S. Government Printing Office, 1968), pp. 68-71; and Henry S. Shryock, Jacob S. Siegel, and Associates, **The Methods and Materials of Demography**, U.S. Bureau of the Census (Washington, D.C.: U.S. Government Printing Office, 1971), pp. 193-199.

Table C. Fertility Characteristics of Farm and Nonfarm Women, by Race: 1976

(For meaning of symbols, see text)

Characteristic	All races			White			Black and other races		
	Total	Farm	Nonfarm	Total	Farm	Nonfarm	Total	Farm	Nonfarm
Children ever born per 1,000 women ever married:									
Total, 15 to 44 years	2,082	2,699	2,064	2,017	2,699	1,955	2,552	(B)	2,550
15 to 24 years	837	909	836	777	812	777	1,319	(B)	1,310
25 to 34 years	1,892	2,123	1,886	1,848	2,100	1,842	2,204	(B)	2,200
35 to 44 years	3,058	3,514	3,037	2,979	3,528	2,952	3,588	(B)	3,591
Married women 14 to 39 years old[1]:									
Births to date per 1,000 women	1,876	2,500	1,859	1,842	2,472	1,823	2,211	(B)	2,199
Lifetime births expected per 1,000 women	2,442	2,947	2,428	2,415	2,914	2,400	2,708	(B)	2,696

[1]Data limited to currently married women reporting on birth expectations.

Source: Unpublished data from the June 1976 Current Population Survey. See table A-6 for bases and table A-4 for standard errors.

ECONOMIC CHARACTERISTICS OF THE FARM POPULATION

Labor force participation. In 1976, about 4 million persons, or three-fifths of the farm population 14 years old and over, were in the labor force, either employed or seeking work (table 4). Although there has been some decline in total number, the rate of labor force participation among farm residents has remained essentially unchanged since 1970.

Overall, the level of labor force participation among farm residents was about the same as that among nonfarm residents. However, there were significant differences between these two residence groups by sex. Farm males were more likely to be in the labor force than nonfarm males; in 1976, the labor force participation rates for the two groups were about 80 percent and 74 percent, respectively. On the other hand, the level of labor force participation of farm women was below that of their nonfarm counterparts. About 40 percent of all females 14 years old and over living on farms were either working or looking for a job in 1976. In comparison, females living off farms had a labor force participation rate of 46 percent.

Farm males also exhibited some differences in labor force participation by region of residence. Males 14 years old and over living on farms in the combined Northern and Western States were more likely than southern farm residents to be in the labor force (82 percent versus 76 percent). Among the female farm population 14 years old and over, about two-fifths were in the labor force irrespective of region.

As in earlier years, labor force participation was somewhat higher among White farm residents than among Black farm residents. In 1976, the labor force participation rates for these two racial groups were 61 and 54 percent, respectively (table 5). This racial disparity in labor force participation is accounted for by differences in the participation of males, as there was no significant difference by race in the likelihood of females being in the labor force. In the male farm population 14 years old and over, the rate of labor force participation was 80 percent for Whites and 67 percent for Blacks; among females, both races had rates of 40 percent.

Agricultural and nonagricultural employment. In 1976, 2.0 million persons, or 51 percent of the employed farm resident labor force, were engaged solely or primarily in agriculture (table 4). This represents a decline of 16 percent, or about 370,000 workers, in primary agricultural employment among farm people since 1970. During this same 1970 to 1976 period, there was no significant change in the number of farm residents working in nonagricultural industries—about 1.9 million workers. However, nonagricultural employment as a proportion of total employment of farm people rose from 45 to 49 percent. Figure 3 shows that as a consequence of the trends in these two proportions, the farm resident labor force in 1976 was almost equally divided between employment in agriculture and employment in nonagricultural pursuits.

There is some evidence that the proportion of the farm resident labor force employed in nonagricultural industries has risen in both of the major regions of the country since 1970. However, southern farm residents are more likely to be employed in nonfarm work than are farm residents of the combined North and West. In 1976, 57 percent of employed southern farm residents worked in nonfarm jobs; outside the South, the proportion was 45 percent. This disparity is apparently associated with the relatively large number of low-income farms in the South, whose residents sought supplemental nonfarm income. Preliminary data from the latest Census of Agriculture (1974) reveal that Southern States contain two-fifths of all farms in the United States but nearly three-fifths of those with sales of less than $2,500.[6]

Employment in nonagricultural industries was more prevalent among farm females than among farm males. In 1976, about 7 out of 10 employed farm resident women were engaged in nonagricultural pursuits; among farm resident males, only 4 out of 10 were so employed.

Unemployment. The rate of unemployment—the proportion of the civilian labor force currently without a job and looking for work—was relatively low in the farm population. In 1976, 2.7 percent of the labor force living on farms was unemployed (table 4). The comparable rate for the civilian noninstitutional population living off farms was 8.2 percent. Within the farm resident labor force, unemployment was higher among Blacks than among Whites; the rates of unemployment in 1976 for these two racial groups were 7.3 percent and 2.4 percent, respectively (table 5). However, despite this difference, the rate of farm unemployment was below that of the nonfarm population for each racial group. For the civilian noninstitutional population living off farms, the rates of unemployment averaged 13.8 percent for Blacks and 7.5 percent for Whites over the period covered by the survey.

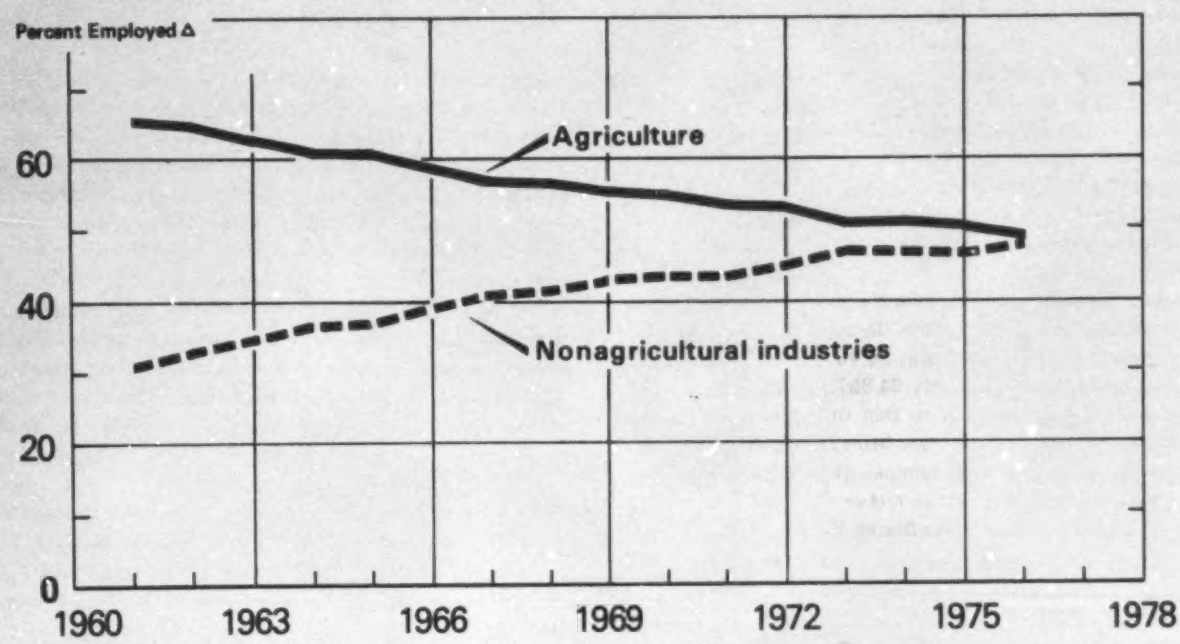
The frequency of holding two or more jobs among persons employed in agriculture is thought to contribute to lower unemployment among farm residents. In May 1976, over 800,000 multiple jobholders, one fifth of the total, had at least one job in agriculture.[7] Most of this latter group were nonagricultural wage and salary workers who operated their own farms as a secondary job. Thus, farm operators with dual employment who lose their nonfarm job are not considered as unemployed because of their continued employment in farm work.

Class of worker. Of the 2.0 million farm residents employed in agriculture in 1976, 62 percent were self-employed and 19 percent were employed in each of the remaining two classes—wage and salary workers and unpaid family workers (table 6). Self-employment was the major class of work among farm persons employed in agriculture irrespective of

[6] U.S. Department of Commerce, Bureau of the Census. 1974 Census of Agriculture. Preliminary Reports. Washington, D.C. 1976.

[7] U.S. Department of Labor, Bureau of Labor Statistics, **Multiple Jobholders, May 1976**. Special Labor Force Report 194. 1977.

Figure 3. Farm Residents Employed in Agriculture and Nonagricultural Industries, 1961 to 1976 *



* *COMPARABLE DATA NOT AVAILABLE FOR YEARS PRIOR TO 1961.*
Δ *PERCENT OF FARM RESIDENT LABOR FORCE 14 YEARS OLD AND OVER.*

region of residence. However, there were significant differences in the class of worker distribution by sex. Self-employment was the dominant class of work among farm males (70 percent), while farm females were most often unpaid family workers (63 percent).

A difference in class of worker distribution was also apparent by race. In 1976, self-employment was the dominant class of work for 63 percent of White farm residents employed in agriculture, whereas only 30 percent of Black farm residents were self-employed. This lower incidence of self-employment (a category that consists chiefly of farm operators) reflects the comparatively small number of farms operated by Blacks. The Census of Agriculture indicates that less than 5 percent of all U.S. farms have a Black operator.

The indicated decline between 1970 and 1976 in the number of farm residents employed in agriculture occurred only among self-employed workers and unpaid family workers. During this 6-year period, there was no significant decrease in the number of farm resident wage and salary agricultural workers.

In 1976, there were 1.9 million persons living on farms and working in nonagricultural industries. As in earlier years, these farm resident nonagricultural workers were predominantly wage and salary workers regardless of race, sex, or region of residence (table 7).

The total number of persons employed solely or primarily in agriculture in the United States averaged 3.6 million in 1976 (table D). Of these, a little more than half (55 percent) lived on farms, while the remainder lived off farms and commuted to work. Although the data for 1976 and 1970 imply a decrease of about 100,000 in total agricultural employment, the estimated decline is not statistically significant. Although there has been no significant change in the total number of agricultural workers, there has been an increase in both the number and proportion of agricultural workers with a nonfarm residence. Between 1970 and 1976 the number of nonfarm resident agricultural workers rose from 1.4 million to 1.6 million; and their proportion of the total increased from 37 percent to 46 percent. This reflects the increasing trend among farm wageworkers to commute from nonfarm residences to their farm jobs. In 1976, about three out of every four wage and salary agricultural workers lived off farms (see tables E and 6). In contrast, self-employed and unpaid family workers in agriculture continue to be mainly farm residents.

Unlike their farm counterparts, who, as discussed earlier, show variations in the class of worker distribution by sex and race, nonfarm resident agricultural workers are primarily wage and salary workers regardless of sex or race.

Income. The median income of farm families was $10,845 in 1975, substantially lower than the $13,829 for nonfarm families (table F). Although this represents a difference of nearly $3,000, the gap is only two-thirds the farm-nonfarm income differential that existed in 1970. Farm median family income in 1970 was $4,500 less, in terms of 1975 dollars, than that of nonfarm families. Since 1970, the median income of farm families has increased by 15 percent, while that of nonfarm families has shown no significant change in real terms.

The contrast between farm and nonfarm income levels is particularly sharp among Black families. While Black nonfarm median family income was $9,404 in 1975, Black farm median family income was only $4,857. The latter figure also presents a striking contrast to that of White farm families ($11,237), being only about two-fifths as large.

The proportion of farm families who are below the low-income level (13.7 percent) is higher than that of nonfarm families (9.5 percent). Among Blacks, the proportion of farm families below the low-income level is 54 percent, about 5½ times as high as the national average for all families and about 4½ times as high as that for White farm families.

REVISION OF FARM POPULATION PROCESSING PROCEDURES

In February 1976, two changes were made in the Current Population Survey (CPS) procedures for determining farm-nonfarm residence of the rural population. The first was necessitated by the change in the official farm definition announced in late 1975 (see "Definitions and Explanations" in the appendix).[8] The questions asked of respondents were altered to enable collection of data under the new definition as well as continuation of collection under the previous definition. (A detailed description of the old and new questions is provided in the appendix.) Basically, the first change involved the addition of a greater number of farm sales intervals. The second change entailed a refinement in the procedure for imputing farm-nonfarm residence for households

[8] All data presented in this report refer to the previous farm definition in use since April 1960.

Table D. Persons 14 Years Old and Over Employed in Agriculture, by Farm-Nonfarm Residence and Sex: April 1976 and 1970

(Numbers in thousands. Figures are five-quarter averages centered on April)

Residence	Both sexes		Male		Female		Percent distribution					
							Both sexes		Male		Female	
	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970
Total employed in agriculture	3,592	3,696	2,941	3,045	651	650	100.0	100.0	100.0	100.0	100.0	100.0
Farm residents	1,960	2,333	1,618	1,902	342	431	54.6	63.1	55.0	62.5	52.5	66.3
Nonfarm residents	1,633	1,363	1,323	1,143	310	220	45.5	36.9	45.0	37.5	47.6	33.8

Table E. Nonfarm Residents 14 Years Old and Over Employed in Agriculture, by Class of Worker and Sex: April 1976 and 1970

(Numbers in thousands. Figures are five-quarter averages centered on April)

Class of worker	Both sexes		Male		Female		Percent distribution					
							Both sexes		Male		Female	
	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970
Total agricultural workers	1,633	1,363	1,323	1,143	310	220	100.0	100.0	100.0	100.0	100.0	100.0
Self-employed workers	481	424	436	396	45	28	29.5	31.1	33.0	34.6	14.5	12.7
Wage and salary workers	1,092	872	863	719	228	153	66.9	64.0	65.2	62.9	73.5	69.5
Unpaid family workers	59	66	24	27	35	39	3.6	4.8	1.8	2.4	11.3	17.7

with nonresponses to the residence questions. These changes were made in an effort to reduce the nonsampling error in the estimates (i.e., certain response, enumeration, and processing errors). The differences which result from the addition of a greater number of sales intervals and the changed imputation procedure are due entirely to changes in the magnitude of nonsampling error associated with the statistics. The revised procedure is described below.

Change in imputation procedure. In the late 1960's, the Census Bureau implemented a simple imputation system to provide missing responses for those households failing to answer the acreage and farm sales questions used to determine farm-nonfarm residence in the CPS. The imputation approach assigns to a sample household with missing responses the information from a "similar" sample household that did respond to the questions. Thus, during the processing of the household records, any rural household with a missing response to either or both of the residence questions was assigned the residence classification (farm or nonfarm) of the last "good" rural household, i.e., the last processed record with answers reported for both residence items.

The revised CPS imputation system for missing acreage and farm sales information follows the same general procedure. A difference arises only when an answer is reported for one of the residence items (acreage or sales) while the other is left blank. In such a situation, the new procedure makes use of the reported item by imputing the missing response from the last "good" rural record with a similar response on the reported item. Farm or nonfarm residence under the old farm definition is then determined on the basis of the reported residence item and the imputed item. Under the new farm definition, residence is determined on the basis of the reported, or imputed, farm sales item only.

The following is a simplified illustration of how the refined imputation system provides an estimate of acreage or farm sales for a household not responding to the specific questions on the CPS questionnaire:

> A rural household reports that the place it owns or rents has 10 acres or more but does not provide the CPS interviewer with information on farm sales. The imputation system is designed to seek out the last rural household that reported acreage of 10 acres or more and a farm sales value. If the reported sales were in the $50-$249 interval, for example, that value is then assigned and the household with a missing response is classified as rural farm under the old definition.

Effect of the revisions. Experience has shown that when new procedures are introduced into a data processing system, some changes in the results must be expected. Therefore, the data were examined to determine the effects, if any, the new question design and imputation system had on the level, geographic distribution, and characteristics of the farm population. The analysis indicated that although the level of farm population was affected by the revisions, its demographic characteristics were not significantly altered.

Although it was not possible to separate the effects of the revised imputation procedure from the new question design, the combined effect of these two procedural changes could be approximated. It was estimated that 130,000 of the

Table F. Income Characteristics of Farm and Nonfarm Families, by Race: 1975

(Families as of March 1976)

Characteristics	All races			White			Black and other races		
	Total	Farm	Nonfarm	Total	Farm	Nonfarm	Total	Farm	Nonfarm
Total families.....thousands..	56,245	2,200	54,045	49,873	2,105	47,768	6,373	95	6,277
Families by 1975 income.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than $4,000 or loss.....	8.0	14.8	7.7	6.6	13.5	6.3	18.6	43.2	18.3
$4,000 to $9,999.....	25.3	31.7	25.0	24.1	31.4	23.7	34.7	36.8	34.7
$10,000 to $14,999.....	22.3	19.9	22.4	22.6	20.5	22.7	20.2	6.3	20.4
$15,000 to $19,999.....	18.8	13.6	19.0	19.5	14.0	19.7	13.3	5.3	13.4
$20,000 and over.....	25.7	20.0	25.9	27.3	20.5	27.6	13.2	7.4	13.3
Median family income (1975 dollars):									
1975.....	$13,719	$10,845	$13,829	$14,268	$11,237	$14,391	$9,321	$4,857	$9,404
1974.....	14,081	11,582	14,179	14,634	11,903	14,753	9,364	6,003	9,433
1973.....	14,595	12,167	14,719	15,254	12,570	15,391	9,200	5,536	9,301
1972.....	14,300	11,389	14,447	14,858	11,722	15,025	9,142	5,494	9,230
1971.....	13,668	9,561	13,868	14,182	9,851	14,398	8,922	4,921	9,053
1970.....	13,676	9,393	13,876	14,189	9,730	14,405	9,032	4,278	9,192
Percent of families.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Below low-income level.....	9.7	13.7	9.5	7.7	11.9	7.5	25.3	53.7	24.9
Above low-income level.....	90.3	86.3	90.5	92.3	88.1	92.5	74.7	46.3	75.1

Source: Data relate to income in 1975 from the March 1976 Current Population Survey. From Current Population Reports, Series P-60, No. 103, "Money Income and Poverty Status of Families and Persons in the United States: 1975 and 1974 Revisions (Advance Report)" and Series P-60, Nos. 101 and 102, and unpublished data.

611,000 decline in farm population from 1975 to 1976 may be attributed to the new procedures. A comparative analysis of data before and after introduction of the new procedures revealed some variation but no significant difference in the regional distribution, age, race, sex, or employment characteristics of the farm population.

RELATED REPORTS

Comparable figures for 1976 appear in **Farm Population**, Series Census-ERS (P-27), No. 47, and earlier reports were published annually beginning in 1961.

Beginning with 1972, the data are not strictly comparable with data for earlier years because of adjustments in sample design and survey procedures occasioned by 1970 census data. However, the effect on comparability with prior data is not considered sufficient to warrant revisions of earlier statistics. Application of 1972 procedures to data for March 1970 lowered the farm population 14 years old and over by about 75,000.

Although not fully comparable with CPS, farm population figures for 1970 for the United States, States, and counties appear in chapter C of **1970 Census of Population**, Volume I, **Characteristics of the Population**; characteristics of the farm population by States are presented in chapter D.

Table 1. FARM POPULATION, BY RACE AND SEX, FOR BROAD AGE GROUPS: APRIL 1976 AND 1970

(Numbers in thousands. Figures are five-quarter averages centered on April)

Age and race	Both sexes		Male		Female		Percent distribution					
							Both sexes		Male		Female	
	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970
Total.....	8,253	9,712	4,305	5,004	3,947	4,708	100.0	100.0	100.0	100.0	100.0	100.0
White.....	7,711	8,775	4,026	4,524	3,685	4,251	93.4	90.4	93.5	90.4	93.3	90.3
Black and other races....	541	938	279	480	262	458	6.6	9.7	6.5	9.6	6.6	9.7
Under 14 years.....	1,676	2,490	878	1,274	797	1,216	100.0	100.0	100.0	100.0	100.0	100.0
White.....	1,541	2,152	812	1,101	729	1,051	91.9	86.4	92.5	86.4	91.5	86.4
Black and other races....	134	338	66	173	68	165	8.0	13.6	7.5	13.6	8.5	13.6
14 years and over....	6,577	7,222	3,427	3,730	3,150	3,492	100.0	100.0	100.0	100.0	100.0	100.0
White.....	6,170	6,623	3,214	3,423	2,956	3,200	93.8	91.7	93.8	91.8	93.8	91.6
Black and other races....	407	600	213	307	194	293	6.2	8.3	6.2	8.2	6.2	8.4

Table 2. FARM POPULATION, BY AGE AND SEX: APRIL 1976 AND 1970

(Numbers in thousands. Figures are five-quarter averages centered on April)

Age	Both sexes		Male		Female		Percent distribution					
							Both sexes		Male		Female	
	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970
All ages.....	8,253	9,712	4,305	5,004	3,947	4,708	100.0	100.0	100.0	100.0	100.0	100.0
Under 14 years.....	1,676	2,490	878	1,274	797	1,216	20.3	25.6	20.4	25.5	20.2	25.8
14 years and over.....	6,577	7,222	3,427	3,730	3,150	3,492	79.7	74.4	79.6	74.5	79.8	74.2
14 to 19 years.....	1,193	1,316	651	714	542	602	14.5	13.6	15.1	14.3	13.7	12.8
20 to 24 years.....	531	502	299	269	233	232	6.4	5.2	6.9	5.4	5.9	4.9
25 to 34 years.....	755	770	396	371	359	399	9.1	7.9	9.2	7.4	9.1	8.5
35 to 44 years.....	912	1,061	439	518	473	543	11.1	10.9	10.2	10.4	12.0	11.5
45 to 54 years.....	1,127	1,250	579	618	547	631	13.7	12.9	13.4	12.4	13.9	13.4
55 to 64 years.....	1,070	1,202	559	641	511	561	13.0	12.4	13.0	12.8	12.9	11.9
65 years and over.....	989	1,122	503	599	486	523	12.0	11.6	11.7	12.0	12.3	11.1

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Table 3. CHARACTERISTICS OF FARM AND NONFARM FAMILIES, BY RACE: 1976

(For meaning of symbols, see text)

Characteristic	All races			White			Black and other races		
	Total	Farm	Nonfarm	Total	Farm	Nonfarm	Total	Farm	Nonfarm
Total families.....thousands..	56,245	2,200	54,045	49,873	2,105	47,768	6,372	95	6,277
Metropolitan.....thousands..	37,801	416	37,386	32,848	403	32,446	4,953	13	4,940
Percent.....	67.2	18.9	69.2	65.9	19.1	67.9	77.7	13.7	78.7
Nonmetropolitan.....thousands..	18,443	1,784	16,659	17,025	1,702	15,323	1,418	82	1,336
Percent.....	32.8	81.1	30.8	34.1	80.9	32.1	22.3	86.3	21.3
All types.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Husband-wife.....	84.1	92.2	83.8	86.8	92.8	86.6	62.9	78.9	62.6
Male head, no wife present.....	2.6	3.5	2.5	2.4	3.2	2.3	4.1	10.5	4.0
Female head, no husband present.....	13.3	4.3	13.7	10.8	4.0	11.1	33.0	10.5	33.3
All sizes.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2 persons.....	37.8	37.9	37.8	38.8	38.7	38.8	30.6	22.1	30.7
3 to 5 persons.....	52.8	50.4	52.9	52.9	50.5	53.0	51.8	48.4	51.9
6 or more persons.....	9.4	11.6	9.3	8.3	10.8	8.2	17.6	28.4	17.4
Mean size of family.....	3.39	3.49	3.39	3.32	3.44	3.32	3.92	4.56	3.91
All families with own children under 18.	30,177	1,032	29,146	26,214	985	25,229	3,963	47	3,917
Percent with--									
1 or 2 own children under 18.....	70.8	66.9	71.0	72.0	68.0	72.2	63.2	(B)	63.3
3 or 4 own children under 18.....	24.6	23.8	24.6	24.2	22.9	24.2	27.1	(B)	26.9
5 or more own children under 18.....	4.6	9.1	4.4	3.8	9.0	3.6	9.7	(B)	9.7
Mean number of own children.....	2.04	2.19	2.04	2.00	2.17	1.99	2.34	(B)	2.33
Percent of all families with members--									
Under 18 years.....	55.8	49.0	56.1	54.1	48.3	54.3	69.1	65.3	69.1
18 to 64 years.....	92.4	89.9	92.5	92.0	89.8	92.1	95.5	91.6	95.6
65 years and over.....	17.7	24.4	17.4	18.0	23.8	17.7	15.2	36.8	14.9

Source: Data from March 1976 Current Population Survey. See Current Population Reports, Series P-20, No. 311, "Household and Family Characteristics: March 1976." See tables A-1, A-2, and A-5 for standard errors.

Table 4. EMPLOYMENT STATUS OF THE FARM POPULATION 14 YEARS OLD AND OVER, BY SEX, APRIL 1976 AND 1970, AND BY REGION, APRIL 1976

(Numbers in thousands. Figures are five-quarter centered on April)

Sex and employment status	United States		North and West	South	Percent distribution			
					United States		North and West	South
	1976	1970	1976	1976	1976	1970	1976	1976
Both sexes	6,577	7,222	4,084	2,493	100.0	100.0	100.0	100.0
In labor force	3,980	4,293	2,526	1,454	60.5	59.4	61.9	58.3
Not in labor force	2,597	2,929	1,557	1,040	39.5	40.6	38.1	41.7
In labor force	3,980	4,293	2,526	1,454	100.0	100.0	100.0	100.0
Employed	3,871	4,211	2,468	1,403	97.3	98.1	97.7	96.5
Agriculture	1,960	2,333	1,356	604	49.2	54.3	53.7	41.5
Nonagricultural industries	1,912	1,878	1,113	799	48.0	43.7	44.1	55.0
Unemployed	109	82	58	51	2.7	1.9	2.3	3.5
Male	3,427	3,730	2,150	1,277	100.0	100.0	100.0	100.0
In labor force	2,727	2,974	1,756	971	79.6	79.7	81.7	76.0
Not in labor force	699	756	393	306	20.4	20.3	18.3	24.0
In labor force	2,727	2,974	1,756	971	100.0	100.0	100.0	100.0
Employed	2,678	2,932	1,730	948	98.2	98.6	98.5	97.6
Agriculture	1,618	1,902	1,116	502	59.3	64.0	63.6	51.7
Nonagricultural industries	1,060	1,030	614	446	38.9	34.6	35.0	45.9
Unemployed	49	42	26	23	1.8	1.4	1.5	2.4
Female	3,150	3,492	1,934	1,216	100.0	100.0	100.0	100.0
In labor force	1,252	1,319	770	482	39.7	37.8	39.8	39.6
Not in labor force	1,898	2,173	1,164	734	60.3	62.2	60.2	60.4
In labor force	1,252	1,319	770	482	100.0	100.0	100.0	100.0
Employed	1,193	1,279	738	455	95.3	97.0	95.8	94.4
Agriculture	342	431	240	102	27.3	32.7	31.2	21.2
Nonagricultural industries	851	849	498	353	68.0	64.4	64.7	73.2
Unemployed	59	40	32	27	4.7	3.0	4.2	5.6

Table 5. EMPLOYMENT STATUS OF THE FARM POPULATION 14 YEARS OLD AND OVER, BY RACE, SEX, AND FOR REGION: APRIL 1976

(Numbers in thousands. Figures are five-quarter averages centered on April. For meaning of symbols, see text)

Labor force status, race, and sex	United States	North and West	South	Percent distribution		
				United States	North and West	South
WHITE						
Both sexes	6,170	4,045	2,125	100.0	100.0	100.0
In labor force	3,761	2,506	1,255	61.0	62.0	59.1
Not in labor force	2,409	1,540	869	39.0	38.1	40.9
In labor force	3,761	2,506	1,255	100.0	100.0	100.0
Employed	3,669	2,449	1,220	97.6	97.7	97.2
Agriculture	1,865	1,341	524	49.6	53.5	41.8
Nonagricultural industries	1,803	1,107	696	47.9	44.2	55.5
Unemployed	92	57	35	2.4	2.3	2.8
Male	3,214	2,128	1,086	100.0	100.0	100.0
In labor force	2,585	1,739	846	80.4	81.7	77.9
Not in labor force	628	389	239	19.5	18.3	22.0
In labor force	2,585	1,739	846	100.0	100.0	100.0
Employed	2,544	1,713	831	98.4	98.5	98.2
Agriculture	1,539	1,103	436	59.5	63.4	51.5
Nonagricultural industries	1,006	610	396	38.9	35.1	46.8
Unemployed	41	26	15	1.6	1.5	1.8
Female	2,956	1,917	1,039	100.0	100.0	100.0
In labor force	1,175	766	409	39.7	40.0	39.4
Not in labor force	1,781	1,152	629	60.3	60.1	60.5
In labor force	1,175	766	409	100.0	100.0	100.0
Employed	1,124	735	389	95.7	96.0	95.1
Agriculture	327	239	88	27.8	31.2	21.5
Nonagricultural industries	798	497	301	67.9	64.9	73.6
Unemployed	51	31	20	4.3	4.0	4.9
BLACK AND OTHER RACES						
Both sexes	407	38	369	100.0	(B)	100.0
In labor force	219	21	198	53.8	(B)	53.7
Not in labor force	189	18	171	46.4	(B)	46.3
In labor force	219	21	198	100.0	(B)	100.0
Employed	203	20	183	92.7	(B)	92.4
Agriculture	94	14	80	42.9	(B)	40.4
Nonagricultural industries	108	5	103	49.3	(B)	52.0
Unemployed	16	1	15	7.3	(B)	7.6
Male	213	21	192	100.0	(B)	100.0
In labor force	142	17	125	66.7	(B)	65.1
Not in labor force	71	5	66	33.3	(B)	34.4
In labor force	142	17	125	100.0	(B)	100.0
Employed	134	17	117	94.4	(B)	93.6
Agriculture	79	13	66	55.6	(B)	52.8
Nonagricultural industries	55	4	51	38.7	(B)	40.8
Unemployed	8	-	8	5.6	(B)	6.4
Female	194	17	177	100.0	(B)	100.0
In labor force	77	5	72	39.7	(B)	40.7
Not in labor force	118	13	105	60.8	(B)	59.3
In labor force	77	5	72	100.0	(B)	(B)
Employed	69	4	65	89.6	(B)	(B)
Agriculture	15	2	13	19.5	(B)	(B)
Nonagricultural industries	54	2	52	70.1	(B)	(B)
Unemployed	8	1	7	10.4	(B)	(B)

Table 6. FARM RESIDENTS 14 YEARS OLD AND OVER EMPLOYED IN AGRICULTURE, BY CLASS OF WORKER, RACE, AND SEX, APRIL 1976 AND 1970, AND BY REGION: APRIL 1976

(Numbers in thousands. Figures are five-quarter averages centered on April. For meaning of symbols, see text)

Race, sex, and class of worker	United States		North and West	South	Percent distribution			
					United States		North and West	South
	1976	1970	1976	1976	1976	1970	1976	1976
TOTAL AGRICULTURAL WORKERS								
Both sexes	1,960	2,333	1,356	604	100.0	100.0	100.0	100.0
Self-employed workers	1,210	1,411	841	369	61.7	60.5	62.0	61.1
Wage and salary workers	379	395	234	145	19.3	16.9	17.3	24.0
Unpaid family workers	370	526	281	89	18.9	22.5	20.7	14.7
Male	1,618	1,902	1,116	502	100.0	100.0	100.0	100.0
Self-employed workers	1,134	1,352	793	341	70.1	71.1	71.1	67.9
Wage and salary workers	330	349	204	126	20.4	18.3	18.3	25.1
Unpaid family workers	153	200	118	35	9.5	10.5	10.6	7.0
Female	342	431	240	102	100.0	100.0	100.0	100.0
Self-employed workers	77	59	49	28	22.5	13.7	20.4	27.5
Wage and salary workers	49	46	30	19	14.3	10.7	12.5	18.6
Unpaid family workers	216	326	162	54	63.2	75.6	67.5	52.9
WHITE								
Both sexes	1,865	2,158	1,341	524	100.0	100.0	100.0	100.0
Self-employed workers	1,182	1,358	836	346	63.4	62.9	62.3	66.0
Wage and salary workers	330	299	225	105	17.7	13.9	16.8	20.0
Unpaid family workers	353	501	280	73	18.9	23.2	20.9	13.9
Male	1,539	1,762	1,103	436	100.0	100.0	100.0	100.0
Self-employed workers	1,106	1,304	787	319	71.9	74.0	71.4	73.2
Wage and salary workers	288	271	197	91	18.7	15.4	17.9	20.9
Unpaid family workers	144	187	118	26	9.4	10.6	10.7	6.0
Female	327	396	239	88	100.0	100.0	100.0	100.0
Self-employed workers	76	54	49	27	23.2	13.6	20.5	30.7
Wage and salary workers	42	28	28	14	12.8	7.1	11.7	15.9
Unpaid family workers	209	314	162	47	63.9	79.3	67.8	53.4
BLACK AND OTHER RACES								
Both sexes	94	175	14	80	100.0	100.0	(B)	100.0
Self-employed workers	28	53	5	23	29.8	30.3	(B)	28.8
Wage and salary workers	49	97	8	41	52.1	55.4	(B)	51.2
Unpaid family workers	18	25	2	16	19.1	14.3	(B)	20.0
Male	79	140	13	66	100.0	100.0	(B)	(B)
Self-employed workers	27	48	5	22	34.2	34.3	(B)	(B)
Wage and salary workers	42	79	7	35	53.2	56.4	(B)	(B)
Unpaid family workers	10	13	1	9	12.7	9.3	(B)	(B)
Female	15	35	2	13	(B)	(B)	(B)	(B)
Self-employed workers	1	5	-	1	(B)	(B)	(B)	(B)
Wage and salary workers	7	18	1	6	(B)	(B)	(B)	(B)
Unpaid family workers	8	12	1	7	(B)	(B)	(B)	(B)

Table 7. FARM RESIDENTS 14 YEARS OLD AND OVER EMPLOYED IN NONAGRICULTURAL INDUSTRIES, BY CLASS OF WORKER, RACE, AND SEX, FOR REGIONS: APRIL 1976

(Numbers in thousands. Figures are five-quarter averages centered on April. For meaning of symbols, see text)

Race, sex, and class of worker	United States	North and West	South	Percent distribution		
				United States	North and West	South
TOTAL NONAGRICULTURAL WORKERS						
Both sexes	1,912	1,113	799	100.0	100.0	100.0
Self-employed workers	183	98	85	9.6	8.8	10.6
Wage and salary workers	1,707	1,004	703	89.3	90.2	88.0
Unpaid family workers	22	10	12	1.2	.9	1.5
Male	1,060	614	446	100.0	100.0	100.0
Self-employed workers	129	69	60	12.2	11.2	13.5
Wage and salary workers	928	544	384	87.5	88.6	86.1
Unpaid family workers	3	1	2	.3	.2	.4
Female	851	498	353	100.0	100.0	100.0
Self-employed workers	53	28	25	6.2	5.6	7.1
Wage and salary workers	779	460	319	91.5	92.4	90.4
Unpaid family workers	19	10	9	2.2	2.0	2.5
WHITE						
Both sexes	1,803	1,107	696	100.0	100.0	100.0
Self-employed workers	177	97	80	9.8	8.8	11.5
Wage and salary workers	1,604	999	605	89.0	90.2	86.9
Unpaid family workers	21	10	11	1.2	.9	1.6
Male	1,006	610	396	100.0	100.0	100.0
Self-employed workers	124	69	55	12.3	11.3	13.9
Wage and salary workers	878	540	338	87.3	88.5	85.4
Unpaid family workers	3	1	2	.3	.2	.5
Female	798	497	301	100.0	100.0	100.0
Self-employed workers	53	28	25	6.6	5.6	8.3
Wage and salary workers	726	459	267	91.0	92.4	88.7
Unpaid family workers	18	9	9	2.3	1.8	3.0
BLACK AND OTHER RACES						
Both sexes	108	5	103	100.0	(B)	100.0
Self-employed workers	5	-	5	4.6	(B)	4.9
Wage and salary workers	103	5	98	95.4	(B)	95.1
Unpaid family workers	-	-	-	-	(B)	-
Male	55	4	51	(B)	(B)	(B)
Self-employed workers	5	-	5	(B)	(B)	(B)
Wage and salary workers	50	4	46	(B)	(B)	(B)
Unpaid family workers	-	-	-	(B)	(B)	(B)
Female	54	2	52	(B)	(B)	(B)
Self-employed workers	-	-	-	(B)	(B)	(B)
Wage and salary workers	53	1	52	(B)	(B)	(B)
Unpaid family workers	-	-	-	(B)	(B)	(B)

Appendix

DEFINITIONS AND EXPLANATIONS

Population coverage. With the exception of the total population shown in table A, all figures in this report relate to the civilian noninstitutional population. The total population shown in table B (210,332,000) differs from the estimated April 1, 1976 total civilian population (212,611,000) chiefly in excluding the institutional population. For the Current Population Survey, both the institutional and military components of the population are regarded as entirely nonfarm.

Farm population. In the Current Population Survey, as in the 1960 and 1970 Censuses of Population, the farm population consists of all persons living in rural territory on places of 10 or more acres if as much as $50 worth of agricultural products were sold from the place in the reporting year (for the CPS the preceding 12 months). It also includes those living on places of under 10 acres if as much as $250 worth of agricultural products were sold from the place in the reporting year. Persons in institutions, summer camps, motels, and tourist camps, and those living on rented places where no land is used for farming, are classified as nonfarm.

From April 1960 through January 1976, farm residence was determined in the Current Population Survey by the responses to two questions. Owners are asked, "Does this place have 10 or more acres?" and renters are asked, "Does the place you rent have 10 or more acres?" If the response is "Yes," the respondent is asked, "During the past 12 months, did sales of crops, livestock, and other farm products from this place amount to $50 or more?" If the acreage response is "No," the inquiry relates to sales of $250 or more.

Beginning in February 1976, the second question was altered so that after responding either "Yes" or "No" to the acreage inquiry, owners/renters are asked, "During the past 12 months, how much did sales of crops, livestock and other farm products from this place amount to?" The respondents are given a choice of four answers: "$1,000 or more," "$250 to $999," "$50 to $249," and "Under $50."

The question was changed to enable identification of the farm population as defined previously (see above) and as defined under the new farm definition announced by the U.S. Department of Agriculture and the Bureau of the Census in August 1975. Under the new definition, a farm is identified on the basis of sales alone, and is defined as any place from which $1,000 or more of agricultural products are sold, or would probably be sold, from the place in the reporting year.

All of the farm figures presented in this report are based on the acreage-sales farm definition in use since 1960. Since the $1,000 sales item was not asked for all 5 of the months needed in computing the April-centered annual average for 1976 (see "Five-quarter averages centered on April" in this section) comparable farm population estimates for both the old and new definitions are not available for 1976.

Farms located within the boundaries of urban territory, comprising a small minority of all farms, are not treated as farms for population census purposes, and their population is not included in the farm population. Urban territory includes all places with a population of 2,500 or more and the densely settled urbanized fringe areas around cities of 50,000 or more. Beginning with the 1972 estimate, the estimated farm population is limited to the rural territory as determined in the 1970 Census of Population. In the Current Population Surveys of 1963 through 1971, the urban-rural boundaries used were those of the 1960 Census of Population and did not take into account the annexations and other substantial expansions of urban territory that were incorporated into the 1970 Census of Population. The net effect was to classify an unknown number of persons as rural farm in the Current Population Surveys of 1970 and 1971 who were treated as urban (and hence nonfarm) in the 1970 census as well as in the Current Population Surveys beginning in 1972.

In the Current Population Survey, unmarried persons attending college away from home are enumerated as residents of their parents' homes, whereas in the Census of Population such persons are enumerated as residents of the communities in which they live while attending college. The effect of this difference is to classify a larger number of college-aged persons as farm residents in the Current Population Survey than would be so classified under decennial census usage.

Nonfarm population. The nonfarm population comprises all persons living in urban areas and all rural persons not on farms.

Five-quarter averages centered on April. April-centered annual averages of the farm population for the years 1970 through 1976 were computed by using data for the five quarters centered on the April date for which the estimate was being prepared. For example, for April 1976, quarterly estimates for the months of October 1975, and January, April, July, and October 1976, were used with a weight of one-eighth given to each of the two October estimates and a weight of one-fourth to each of the estimates for the other 3 months. One reason for the choice of April as the date for centering population estimates is that this is the decennial census month.

April-centered annual averages for persons under 14 years by race and sex, and for persons 14 years old and over, by race, sex, age, labor force characteristics, and region were also computed for 1976 by using data for the specified characteristics for the five quarters centered on April 1976.

Metropolitan-nonmetropolitan residence. The population residing in standard metropolitan statistical areas (SMSA's) constitutes the metropolitan population. The metropolitan population in this report is based on SMSA's as defined in the 1970 population census publications and does not include any subsequent additions or changes. For the 1970 census, except in New England, an SMSA is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central county. In New England, SMSA's consist of towns and cities, rather than counties.

Geographic regions. The major regions of the United States for which data are presented represent groups of States, as follows:

North and West: Northeast, North Central, and West regions combined.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.

North Central: Illionois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin.

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia.

Age. The age classification is based on the age of the person at last birthday.

Race. The population is divided into three groups on the basis of race: White, Black, and "other races." The last category includes Indians, Japanese, Chinese, and any other race except White and Black. In the text of this report, Blacks refer to Blacks and persons of races other than White.

Family. The term "family," as used in this report, refers to a group of two or more persons related by blood, marriage, or adoption and residing together; all such persons are considered as members of the same family. Thus, if the son of the head of the household and the son's wife are in the household, they are treated as part of the head's family. On the other hand, a lodger and his wife not related to the head of the household or an unrelated servant and his wife are considered as additional families, and not a part of the household head's family.

The mean size of family is derived by dividing the number of persons in families by the total number of families. In the classification of families by number of family members, the head of the family and all other persons in the family are included. The number of family members is the same as size of family.

Head of family. One person in each family was designated as the head. The head of a family is usually the person regarded as the head by members of the family. Women are not classified as heads if their husbands are resident members of the family at the time of the survey. Married couples related to the head of a family are included in the head's family and are not classified as separate families.

The Census Bureau has traditionally designated a head of household to serve as the central reference person for the collection and tabulation of data for individual members of the household (or family). However, recent social changes have resulted in a trend toward more equal status for all members of the household (or family), making the term "head" less relevant in the analysis of household and family data. As a result, the Bureau is currently developing new techniques of enumeration and data presentation which will eliminate the concept of "head." While some of the data in this report are based on the concept of "head," methodology for future Census Bureau reports will reflect a gradual movement away from this traditional practice.

Type of family. The classification of families by type is based on the sex and marital status of head. Families with a head and wife present are termed "husband-wife" families. Families in which the spouse of the head is not present are families with "other male head" or "female head" depending on the sex of the head.

Own children. "Own" children in a family are single (never married) sons and daughters, including stepchildren and adopted children, of the family head. In table 3, the mean number of own children is derived by dividing the number of children by the total number of families with own children under 18.

Marital status. Data refer to present marital status. The primary categories of marital status are single (never married) and ever married. The following sub-categories of ever married may be distinguished: (1) married, spouse present; (2) married, spouse absent (excluding separated); (3) separated; (4) widowed; or (5) divorced.

Lifetime birth expectations. Lifetime births expected are determined by adding any additional births a woman expects

to the children she has already borne, if any. Questions regarding expected additional births were asked in June 1976 of women 14 to 39 years old who were currently married (spouse present or spouse absent excluding separated).

Births to date. In the data on birth expectations of wives in table C, the number of "births to date" has the same meaning as the number of children ever born.

Children ever born. The term "children ever born" refers to the total number of live births reported by ever-married women. Included in the number are children born to the woman before her present marriage, children no longer living, and children away from home, as well as children who were still living in the home.

Labor force and employment status. The definitions of labor force and employment status in this report relate to the population 14 years old and over.

Labor force. Persons are classified as in the labor force if they were employed as civilians, unemployed, or in the Armed Forces during the survey week. The "civilian labor force" is comprised of all civilians classified as employed or unemployed.

Employed. Employed persons comprise (1) all civilians who, during the specified week, did any work at all as paid employees or in their own business or profession, or on their own farm, or who worked 15 hours or more as unpaid workers on a farm or in a business operated by a member of the family, and (2) all those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, or labor-management dispute, or because they were taking time off for personal reasons, whether or not they were paid by their employers for time off, and whether or not they were seeking other jobs. Excluded from the employed group are persons whose only activity consisted of work around the house (such as own home housework, painting or repairing own home, etc.) or volunteer work for religious, charitable, and similar organizations.

Unemployed. Unemployed persons are those civilians who, during the survey week, had no employment but were available for work and (1) had engaged in any specific job-seeking activity within the past 4 weeks, such as registering at a public or private employment office, meeting with prospective employers, checking with friends or relatives, placing or answering advertisements, writing letters of application, or being on a union or professional register; (2) were waiting to be called back to a job from which they had been laid off; or (3) were waiting to report to a new wage or salary job within 30 days.

Not in the labor force. All civilians who are not classified as employed or unemployed are defined as "not in the labor force." This group who are neither employed nor seeking work includes persons engaged only in own home housework, attending school, or unable to work because of long-term physical or mental illness; persons who are retired or too old to work; seasonal workers for whom the survey week fell in an off season; and the voluntarily idle. Persons doing only unpaid family work (less than 15 hours) are also classified as not in the labor force.

Agriculture. The industry category "agriculture" is somewhat more inclusive than the total of the two major occupation groups, "farmers and farm managers" and "farm laborers and supervisors." It also includes (1) persons employed on farms in occupations such as truck driver, mechanic, and bookkeeper, and (2) persons engaged in certain activities other than strictly farm operation such as cotton ginning, contract farm services, veterinary and breeding services, hatcheries, experimental stations, greenhouses, landscape gardening, tree service, trapping, hunting preserves, and kennels.

Nonagricultural industries. This category includes all industries not specifically classed under agriculture.

Multiple jobs. Persons with two or more jobs during the survey week were classified as employed in the industry in which they worked the greatest number of hours during the week. Consequently, some of the persons shown in this report as engaged in nonagricultural activities also engaged in agriculture and vice versa.

Class of Worker

Self-employed workers. Persons who worked for profit or fees in their own business, profession, or trade, or who operated a farm either as an owner or tenant.

Wage and salary workers. Persons who worked for any governmental unit or private employer for wages, salary, commission, tips, pay "in kind," or at piece rates.

Unpaid family workers. Persons who worked without pay on a farm or in a business operated by a person to whom they are related by blood or marriage.

Income. Total money income is the algebraic sum of the amounts received in the preceding calendar year from each of the following sources: (1) Money wages or salary; (2) net income from nonfarm self-employment; (3) net income from farm self-employment; (4) Social Security or railroad retirement; (5) dividends, interest (on savings or bonds), income from estates or trusts, or net rental income; (6) public assistance or welfare payments; (7) unemployment and workmen's compensation, government employee pensions, or veterans' payments; (8) private pensions, annuities, alimony, regular contributions from persons not living in this household, and other periodic income.

Receipts from the following sources are not included as income: (1) Money received from the sale of property, such as stocks, bonds, a house, or a car (unless the person was engaged in the business of selling such property, in which case the net proceeds would be counted as income from self-employment); (2) withdrawals of bank deposits; (3) money borrowed; (4) tax refunds; (5) gifts; and (6) lump-sum inheritances or insurance payments.

Family income. The total income of a family is the algebraic sum of the amounts received by all income recipients in the family.

In the income distribution for families, the lowest income group (less than $4,000) includes those families who were classified as having no income in the income year and those reporting a loss in net income from farm and nonfarm self-employment or in rental income. Many of these were living on income "in kind," savings, or gifts; or were newly constituted families, or families in which the sole breadwinner had recently died or had left the household. However, many of the families who reported no income probably had some money income which was not recorded in the survey.

It should be noted that although the income statistics refer to receipts during the preceding year, the composition of families refers to the time of the survey. The income of the family does not include amounts received by persons who were members of the family during all or part of the income year if these persons no longer resided with the family at the time of enumeration. On the other hand, family income includes amounts reported by related persons who did not reside with the family during the income year but who were members of the family at the time of enumeration.

The median income is the amount which divides the distribution into two equal groups, one having incomes above the median, and the other having incomes below the median. The medians for families are based on all families.

Low-income (poverty) definition. Families and unrelated individuals are classified as being above or below the low-income level using the poverty index adopted by a Federal Interagency Committee in 1969. This index is based on the Department of Agriculture's 1961 Economy Food Plan and reflects the different consumption requirements of families based on their size and composition, sex and age of the family head, and farm-nonfarm residence. In order to keep the poverty index constant over time, the thresholds are updated annually based on changes in the Consumer Price Index. The low-income threshold for a nonfarm family of four was $5,500 in 1975, $4,275 in 1972, and $2,973 in 1959. Corresponding low-income thresholds for a farm family of four were $4,695 in 1975, $3,643 in 1972, and $2,539 in 1959.

In analyzing data on the low-income population, the following limitations should be noted. The low-income concept has been developed in order to identify, in dollar terms, a minimum level of income adequacy for families of different types in keeping with American consumption patterns. Based on an analysis of the percent of income devoted to food expenditures, an estimate was developed of the minimum cost at which an American family, making average choices, can be provided with a diet meeting recommended nutritional goals. Consequently, it is an overall statistical yardstick which reflects the different consumption requirements of families of different size, taking into account family composition and farm-nonfarm residence. Insofar as individual circumstances or consumption patterns differ, the dollar value of the low-income threshold for a given family size may not represent the money income required by an individual family to maintain a level of economic well-being equivalent to other families with similar incomes.

Average annual rate of change. Average annual rates of change are estimated using an exponential model. Specifically the average annual rate of change is defined to be the value x which satisfies the relationship

$$y_t = y_o e^{tx} \qquad (1)$$

Here y_o is the population at an initial point in time, y_t is the population at a later point in time, and t is the number of years that have elapsed between the measurements of the population sizes. The annual average rate of change is estimated using the estimates of the population for the two points in time in equation (1) and solving for x.

Symbols. A dash "–" represents zero and the symbol "B" means that the base for the derived figure is less than 75,000.

Rounding. The individual figures in this report are rounded to the nearest thousand. With few exceptions, the individual figures have not been adjusted to group totals, which are independently rounded. Percentages are rounded to the nearest tenth of a percent; therefore, the percentages in a distribution do not always add to exactly 100.0 percent. The totals, however, are always shown as 100.0. Percentages are based on the rounded absolute numbers.

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of data. Most of the estimates in this report are April-centered five-quarter averages of data collected in 1960 through 1976 from the Current Population Survey (CPS) of the Bureau of the Census. The monthly CPS deals mainly with labor force data for the civilian, noninstitutional population. Questions relating to labor force participation are asked about each member 14 years old and older in each sample household. Data on fertility and birth expectations, income and low income status for the year 1975, and household and family characteristics of farm and nonfarm families are not based on five-quarter averages. These types of data are obtained from supplementary questions to CPS

asked in the months of June (fertility) and March 1976. The farm and nonfarm residence data for persons are April-centered five-quarter averages.

The present CPS sample was initially selected from the 1970 census file and is updated continuously to reflect new construction where possible (see section "Nonsampling Variability" below). Previous sample designs used, as a basis, files from the census most recently completed at the time.

The following table provides a description of some aspects of the CPS sample designs in use during the referenced data-collection periods.

The estimation procedure used for the monthly CPS data involves the inflation of the weighted sample results to independent estimates of the civilian noninstitutional population of the United States by age, race, and sex. These independent estimates were based on statistics from decennial censuses; statistics on births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces. For estimates from March CPS data in this report persons in the Armed Forces were also included, and the estimation procedure in March for data in this report also involves a further adjustment so that husband and wife of a household receive the same weight.

Description of the Current Population Survey

Time period	Number of sample areas[1]	Households eligible		Households visited, not eligible[2]
		Interviewed	Not interviewed	
March 1977[3]	614	53,500	2,500	9,500
March 1976	461	45,000	2,000	8,000
March 1970	449	48,000	2,000	8,500

[1]These areas were chosen to provide coverage in each State and the District of Columbia.
[2]These are households which were visited but were found to be vacant or otherwise not eligible for interview.
[3]A supplementary sample of housing units in 24 States and the District of Columbia was incorporated with the monthly CPS to produce March 1977 data.

Decennial census of population. Decennial census data in this report are based on complete counts or on the samples associated with the census as indicated in the list of sources. Descriptions of samples from the census are found in the appropriate census publications. To determine if the 1950, 1960, and 1970 data in the text tables of this report are based on complete counts or on the samples associated with the census refer to the sources of data at the bottom of that table.

Reliability of the estimates. Since the estimates in these tables were based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and enumerators. There are two types of errors possible in an estimate based on a sample survey—sampling and nonsampling. The standard errors provided for this report primarily indicate the magnitude of the sampling error. They also partially measure the effect of some nonsampling errors in response and enumeration, but do not measure any systematic biases in the data. The full extent of nonsampling error is unknown. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates.

Nonsampling variability. As in any survey work, the results are subject to errors of response and nonreporting in addition to sampling variability. Nonsampling errors can be attributed to many sources, e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness to provide correct information on the part of respondents, inability to recall information, mistakes made in collection, such as in recording or coding the data, mistakes made in processing the data, mistakes made in estimating values for missing data, and failure to represent all units with the sample (undercoverage).

The approximate magnitude of three sources of undercoverage in CPS is known. About 600,000 conventional new construction units (housing units, other than mobile homes or group quarters) were issued building permits prior to the 1970 census but building was not completed by the time of the census (i.e., April 1970); these units have no representation in the CPS sample. Most conventional new construction for which building permits were issued after the census, is represented. About 290,000 occupied mobile homes are not represented in CPS; these units were either missed in the census or have been built or occupied since the census. In addition, about 70,000 units are not represented either because they have been converted from nonresidential units or

are houses moved to different sites since the census. The extent of other sources of undercoverage is unknown.

Note: These estimates of missed units are relevant to the present sample only and not to earlier designs where the extent of undercoverage was generally less.

In most cases the schedule entries for income are based on the memory or knowledge of one person, usually the wife of the family head. The memory factor in data derived from field surveys of income probably produces underestimates because the tendency is to forget minor or irregular sources of income. Other errors of reporting are due to misrepresentation or to misunderstanding as to the scope of the income concept.

Sampling variability. The standard errors given in the following tables are primarily measures of sampling variability, that is, of the variations that occurred by chance because a sample rather than the whole of the population was surveyed. The chances are about 68 out of 100 that an estimate from the survey differs from a complete census figure by less than the standard error. The chances are about 90 out of 100 that this difference would be less than 1.6 times the standard error and about 95 out of 100 that the difference would be less than twice the standard error.

All of the statements of comparison appearing in the text are significant at a 1.6 standard error level or better, and most are significant at a level of more than 2.0 standard errors. This means that for most differences cited in the text, the estimated difference is greater than twice the standard error of the difference. Statements of comparison qualified in some way (e.g., by use of the phrase, "some evidence") have a level of significance between 1.6 and 2.0 standard errors.

Note when using small estimates. Percent distributions are shown in the report only when the base is 75,000 or greater. Because of the large standard errors involved, there is little chance that percentages would reveal useful information when computed on a smaller base. Estimated numbers are shown, however, even though the relative standard errors of these numbers are larger than those for corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

Comparability with other data. Data obtained from the CPS and other sources are not entirely comparable. This is due in large part to differences in interviewer training and experience and in differing collection procedures. These differences are not reflected in the standard errors provided. Therefore, caution should be used in comparing results between different sources. See the appendix for more details on the comparability of CPS and other data.

Standard errors for data based on the decennial census. Sampling errors of all data from the samples of the decennial censuses shown in this report except for fertility are small enough to be disregarded. The standard errors for census sample data may be found in the appropriate census volumes.

Standard error tables and their use. In order to derive standard errors that would be applicable to a large number of estimates and could be prepared at a moderate cost, a number of approximations were required. Therefore instead of providing a standard error for each estimate, generalized sets of standard errors are provided for various types of characteristics. As a result the sets of standard errors provided give an indication of the order of magnitude of the standard error of an estimate rather than the precise standard error.

The figures presented in tables A-1, A-2, and A-3 provide approximations to standard errors of various estimates for families, unrelated individuals, and persons. Table A-4 provides approximations to the standard errors of estimated fertility rates for the nonfarm population.[1] Estimated standard errors cannot be obtained from tables A-1, A-2, and A-3 without the use of the factors in table A-5. These factors must be applied to the generalized standard errors in order to adjust for the combined effect of sample design and the estimating procedure on the value of the characteristic. The standard error tables with which each factor should be used are indicated in table A-5. Standard errors for intermediate values not shown in the generalized tables of standard errors may be approximated by interpolation.

[1] Estimated standard errors cannot be calculated for table C (fertility rates) without the use of the bases in table A-6.

Table A-1. Standard Errors of Estimated Numbers of Persons or Families in the Farm Population

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error
25	6
50	9
100	13
250	20
500	29
1,000	42
2,500	70
5,000	107
10,000	173
15,000	235

Note: For standard errors for metropolitan or nonmetropolitan data multiply the standard errors above by 1.4.
For standard errors for the years 1960 to 1966 multiply the above standard errors by 1.2.

Two parameters are used (denoted as "a" and "b") to calculate standard errors for each type of characteristic; they are presented in table A-5. These parameters were used to calculate the tabulated standard errors in tables A-1, A-2, and A-3 and to calculate the factors in table A-5. They also may be used to calculate the standard errors for estimated numbers and estimated percentages directly. Methods for direct computation are given in the following sections.

Standard errors of estimated numbers. The approximate standard error, σ_x of an estimated number shown in this report can be obtained in two ways. It may be obtained by use of the formula

$$\sigma_x = f\sigma \qquad (1)$$

where f is the appropriate factor from table A-5, and σ is the standard error on the estimate obtained by interpolation from table A-1 or A-2. Alternately, standard errors may be approximated by the following formula, (2), from which the standard errors were calculated in tables A-1 and A-2. Use of this formula will provide more accurate results than the use of formula (1) above.

$$\sigma_x = \sqrt{ax^2 + bx} \qquad (2)$$

Here x is the size of the estimate and a and b are the parameters in table A-5 associated with the particular type of characteristic.

Table A-2. Standard Errors of Estimated Numbers of Persons or Families in the Total or Nonfarm Population

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error
25	6
50	9
100	13
250	20
500	28
1,000	40
2,500	63
5,000	88
10,000	122
15,000	145
25,000	180
50,000	223
100,000	199

Note: For standard errors for metropolitan or nonmetropolitan data multiply the standard errors above by 1.4.
For standard errors for the years 1960 to 1966 multiply the above standard errors by 1.2

Standard errors of estimated percentages. The reliability of an estimated percentage, computed using sample data for both numerator and denominator, depends on both the size of the percentage and the size of the total upon which this percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. When the numerator and denominator of the percentage are in different categories, use the factor or parameters indicated by the numerator. The approximate standard error, $\sigma_{(x,p)}$, of an estimated percentage can be obtained by use of the formula

$$\sigma_{(x,p)} = f\sigma \qquad (3)$$

In this formula f is the appropriate factor from table A-5 and σ is the standard error on the estimate from table A-3. Alternately, standard errors may be approximated by the following formula, (4), from which the standard errors in table A-3 were calculated; direct computation will give more accurate results than use of the standard error tables and the factors.

$$\sigma_{(x,p)} = \sqrt{\frac{b}{x}.\, p\,(100-p)} \qquad (4)$$

Here x is the size of the subclass of persons or families and unrelated individuals which is the base of the percentage, p is the percentage ($0 \leq p \leq 100$), and b is the parameter in table A-5 associated with the particular type of characteristic in the numerator of the percentage.

Illustration of use of standard error tables. Table D of this report shows that in 1976 there were 3,592,000 persons employed in agriculture. Table A-5 shows that the appropriate factor is 0.9 and that this factor is to be used with the standard errors in table A-1. Table A-1 shows the standard error on an estimate of this size to be approximately 86,200. Applying the factor of 0.9 and using formula (1), the approximate standard error is 0.9 x 86,200 = 78,000.[2] The chances are 68 out of 100 that the estimate would have been a figure differing from a complete census figure by less than 78,000. The chances are 95 out of 100 that the estimate would have differed from a complete census figure by less than 156,000 (twice the standard error).

Of these 3,592,000 persons employed in agriculture 2,941,000 or 81.9 percent are males. From table A-5 the appropriate b parameter for computing standard errors is 1334.7957; using formula (4), the standard error on an estimate of 81.9 percent is

$$\sqrt{\frac{1334.7957}{3,592,000}\, 81.9\,(100-81.9)} \doteq 0.7 \text{ percent}$$

[2] Formula (2) gives a standard error of 84,000.

Consequently, chances are 68 out of 100 that the estimated 81.9 percent would be within 0.7 percentage points of a complete census figure. Chances are 95 out of 100 that the estimate would be within 1.4 percentage points of a complete census figure, i.e., the 95-percent confidence interval would be from 80.5 to 83.3 percent.

Standard error of a difference. For a difference between two sample estimates, the standard error is approximately equal to

$$\sigma_{(x-y)} \doteq \sqrt{\sigma_x^2 + \sigma_y^2} \qquad (5)$$

Table A-3. Standard Errors of Estimated Percentages

(68 chances out of 100)

Base of percentages (thousands)	Estimated percentage					
	1 or 99	2 or 98	5 or 95	10 or 90	25 or 75	50
25	2.5	3.5	5.5	7.6	10.9	12.6
50	1.8	2.5	3.9	5.4	7.7	8.9
100	1.3	1.8	2.8	3.8	5.5	6.3
250	0.8	1.1	1.7	2.4	3.5	4.0
500	0.6	0.8	1.2	1.7	2.4	2.8
1,000	0.4	0.6	0.9	1.2	1.7	2.0
2,500	0.3	0.4	0.6	0.8	1.1	1.3
5,000	0.2	0.3	0.4	0.5	0.8	0.9
10,000	0.13	0.2	0.3	0.4	0.5	0.6
15,000	0.10	0.14	0.2	0.3	0.4	0.5

Note: For metropolitan or nonmetropolitan standard errors, multiply appropriate standard errors above by 1.4. For standard errors for the years 1960 to 1966, multiply avove standard errors by 1.22.

Table A-4. Standard Errors of Estimated Fertility Rates for the Nonfarm Population

(68 chances out of 100)

Number of women (thousands)	Children ever born per 1,000 women							
	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000
250	51	93	129	164	198	234	274	315
500	36	66	92	116	140	166	194	222
750	30	54	74	95	114	135	158	181
1,000	26	47	65	82	99	117	137	158
2,000	18	33	45	58	70	83	97	112
5,000	11	20	29	37	44	52	61	70
10,000	9	15	20	26	31	38	44	50
15,000	7	12	16	21	26	29	35	41
20,000	6	11	15	19	23	27	31	35
25,000	5	9	12	16	20	24	28	32
30,000	5	8	12	15	19	22	25	29
35,000	4	8	11	14	17	20	23	27

Note: Multiply these standard errors by 1.38 to obtain standard errors for fertility of the farm population.

where σ_x and σ_y are the standard errors of the estimates x and y; the estimates can be of numbers, percents, averages, etc. This will represent the actual standard error quite accurately for the difference between two estimates of the same characteristic in two different areas, or for the difference between two separate and uncorrelated characteristics in the same area. If however, there is a high positive correlation between the two characteristics, the formula will overestimate the true standard error.

Illustration of the computation of the standard error of a difference. Table 1 of this report shows that there were 4,305,000 males and 3,947,000 females on farms in 1976. The estimated difference between the number of males on farms and the number of females on farms is 358,000.

Using formula (2) and the appropriate parameters from table A-5, the standard error on the estimate of 4,305,000 males on farms is 97,000.

Similarly the approximate standard error on the estimate of 3,947,000 females on farms is 92,000. Therefore, from formula (5) the approximate standard error on the estimate difference of 358,000 persons is

$$134{,}000 \doteq \sqrt{(97{,}000)^2 + (92{,}000)^2}$$

This means the chances are 68 out of 100 that the estimated difference based on the sample estimates would vary from the difference derived using complete census figures by less than 134,000 persons. The 68-percent confidence interval about the 358,000 persons difference is from 224,000 to 492,000 i.e., 358,000 ± 134,000. A conclusion that the average estimate of the difference derived from all possible samples of the same size and design lies within a range computed in this way would be correct for roughly 68 percent of all possible samples. The 95-percent confidence interval is 90,000 to 626,000. Thus, we can conclude with 95-percent confidence that there was a significant difference in the numbers of males and females on farms in 1976.

Standard error of a ratio. Certain mean values for persons in families shown in the tables of this report were calculated as the ratio of two numbers. For example, the mean number of persons per family is calculated as

$$\frac{x}{y} = \frac{\text{total number of persons in families}}{\text{total number of families}}$$

Standard errors for these means may be approximated as shown below. There are two cases to consider. In either case, the denominator y represents a count of families of a certain class, and the numerator x represents a count of persons with the characteristic under consideration who are members of these families.

Case 1: There is at least one person having the characteristic in every family of the class: as for example, the mean number of persons per family or the mean number of persons per family with a male head. For ratios of this kind, the standard error is approximated by the following formula:

$$\frac{\sigma_x}{y} = \sqrt{\left(\frac{x}{y}\right)^2 \left[\left(\frac{\sigma_y}{y}\right)^2 + \left(\frac{\sigma_x}{x}\right)^2 - 2\rho\left(\frac{\sigma_x}{x}\right)\left(\frac{\sigma_y}{y}\right)\right]} \qquad (6)$$

The standard error of the estimated number of families, σ_y, and the standard error of the estimated number of persons with the characteristic in those families, σ_x, may be calculated by the methods described above. in formula (6), ρ represents the correlation coefficient between the numerator and the denominator of the estimate. In the above examples, and for other ratios of this kind, use 0.7 as an estimate of ρ.

Case 2: The number of persons having the characteristic in a given family may be 0, 1, 2, 3, or more: for example, the mean number of persons under 18 years of age. For ratios of this kind the standard error is approximated by formula (6) but ρ is assumed to be zero. If ρ is actually positive, then this procedure will provide an overestimate of the standard error of the ratio.

Standard error of a fertility ratio. Table A-4 provides standard errors for both number of children ever born and number of expected lifetime births per 1,000 women.[3] The sampling variability on the ratio of children born per 1,000 women depends on the shape of the distribution on which the ratio is based, the size of the sample, the sample design and the use of ratio estimates.

Illustration of the computation of the standard error of a fertility ratio. Table C shows that in 1976 there were 2,123 children ever born per 1,000 ever-married farm women aged 25 to 34. Table A-6 shows that there were about 324,000 women in this group. Table A-4 shows the standard error of a

[3] The bases for the estimated fertility rates are given in table A-6 for use with table A-4 to obtain estimated standard errors.

Table A-5. Parameters or Factors and Standard Error Tables to be Used to Obtain Standard Errors for Each Type of Characteristic

Type of characteristic	Parameters		f factors and standard error tables	
	a	b	f factors	Standard error tables
PERSONS				
Farm population:				
Total, agriculture employed, or nonagriculture employed	0.00013886	1597.6160	1.0	A-1,A-3
Total or nonfarm population:				
Agriculture employment	0.000177	1334.7957	0.9	A-1,A-3
Total or nonagriculture employment:				
Total or White	-0.000006	759.3218	0.7	A-2,A-3
Black and other races	-0.000049	680.0632	0.7	A-2,A-3
FAMILIES AND HOUSEHOLDS				
Farm population:				
Total or White	0.000179	2652.3108	1.3	A-1,A-3
Black and other races	0.000662	2397.1230	1.2	A-1,A-3
Total or nonfarm population:				
Total or White	-0.000010	1388.6444	0.9	A-2,A-3
Black and other races	-0.000087	1255.0382	0.9	A-2,A-3
FAMILY INCOME				
Farm:				
Total or White	0.000143	2030.6775	1.1	A-1,A-3
Black and other races	0.001144	1761.1516	1.0	A-1,A-3
Total or nonfarm:				
Total or White	-0.000008	1063.1809	0.8	A-2,A-3
Black and other races	-0.000064	922.0689	0.8	A-2,A-3
FERTILITY				
Farm:				
Number of women	0.000322	2993.0343	1.4	A-1,A-3
Total or nonfarm:				
Number of women	-0.000018	1567.0337	1.0	A-2,A-3

Note: For standard errors for metropolitan or nonmetropolitan data, multiply the appropriate parameter by 2.0. For standard errors for the years 1960 to 1966 multiply the appropriate parameter by 1.5.

rate of 2,123 children on a base of 324,000 women to be approximately 157. Multiplying the standard error of 157 by 1.38 (factor for fertility standard errors of the farm population), the standard error becomes 217. Consequently, the chances are 68 out of 100 that the estimate would have shown a fertility rate differing from a complete census figure by less than 217. The chances are 95 out of 100 that the estimate would have shown a fertility rate differing from a complete census figure by less than 434 (twice the standard error), i.e., this 95-percent confidence interval would be between 1,689 and 2,557 children ever born per 1,000 ever-married farm women aged 25 to 34.

Table A-6. Estimates of the Number of Ever-Married Women and Number of Currently Married Women Reporting Birth Expectations, by Age, Race and Farm-Nonfarm Residence: June 1976 CPS

(Numbers in thousands)

Women by age	Total			White			Black and other races		
	Total	Farm	Nonfarm	Total	Farm	Nonfarm	Total	Farm	Nonfarm
WOMEN EVER MARRIED									
Total, 15 to 44 years.....	31,907	905	31,002	28,010	864	27,146	3,897	41	3,856
15 to 24 years.....	6,595	110	6,485	5,867	101	5,766	728	9	719
25 to 34 years.....	14,136	324	13,812	12,414	310	12,103	1,722	14	1,709
35 to 44 years.....	11,175	471	10,705	9,729	453	9,276	1,446	18	1,429
WOMEN CURRENTLY MARRIED									
14 to 39 years old, reporting birth expectations.....	19,267	524	18,742	17,476	500	16,975	1,791	24	1,767

Source: U.S. Bureau of the Census, Current Population Survey, June 1977.

Note: This table is to be used for computation of the standard errors of estimated fertility rates in table C.